DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: CHRISTINE LAKE		Lake Area (ha):	68.80
Town: STARK		Maximum depth (m):	17.5
County: Coos		Mean depth (m):	6.9
River Basin: Connection	ut	Volume (m³):	4754000
Latitude: 44°37'56"		Relative depth:	1.9
Longitude: 71°24'33'	' W	Shore configuration:	1.53
Elevation (ft):	1202	Areal water load (m/yr): 11.99
Shore length (m):	4500	Flushing rate (yr^{-1}) :	1.70
Watershed area (ha):	1165.5	P retention coeff.:	0.53
% watershed ponded:	0.0	Lake type:	natural

BIOLOGICAL:	25 January 1994	12 August 1993
DOM. PHYTOPLANKTON (% TOTAL) #1	ASTERIONELLA 45%	RHIZOSOLENIA 55%
#2	MELOSIRA 40%	CRYPTOMONAS 25%
#3	(ALL ALGAE SPARSE)	
PHYTOPLANKTON ABUNDANCE (cells/mL)		280
CHLOROPHYLL-A (µg/L)		3.44
DOM. ZOOPLANKTON (% TOTAL) #1	SPARSE - NO DOMINANT	ACTINOPHRYS 22%
#2		KERATELLA 14%
. #3		GASTROPUS 14%
ROTIFERS/LITER	9	50
MICROCRUSTACEA/LITER	<1	33
ZOOPLANKTON ABUNDANCE (#/L)	9	107
VASCULAR PLANT ABUNDANCE		Scattered
SECCHI DISK TRANSPARENCY (m)		4.9
BOTTOM DISSOLVED OXYGEN (mg/L)	8.9	5.7
BACTERIA (E. coli, #/100 ml) #1		
#2		
. #3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 8.2 Hypolimnion volume (m³): 793000 Anoxic volume (m³): None

HEMICAL: LAKE Town: STARK						
	25 Janua	ary 1994	12 /	12 August 1993		
DEPTH (m)	4.0	8.0	2.5	7.0	12.0	
pH (units)	6.7	6.6	7.0	6.7	6.2	
A.N.C. (Alkalinity)	3.8	3.8	2.5	2.8	3.5	
NITRATE NITROGEN	0.06	0.07	< 0.02		0.09	
TOTAL KJELDAHL NITROGEN	0.20	0.31	0.17	0.11	0.23	
TOTAL PHOSPHORUS	0.002	0.002	0.004	0.004	0.005	
CONDUCTIVITY (µmhos/cm)	29.2	28.8	26.4	27.3	27.6	
APPARENT COLOR (cpu)	12	14	8	11	15	
MAGNESIUM			0.34			
CALCIUM			2.2			
SODIUM			1.5			
POTASSIUM			0.45			
CHLORIDE	< 2	< 2	< 3		< 3	
SULFATE	6	6	5		5	
TN : TP	130	190	43		64	
CALCITE SATURATION INDEX			3.6			

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1993

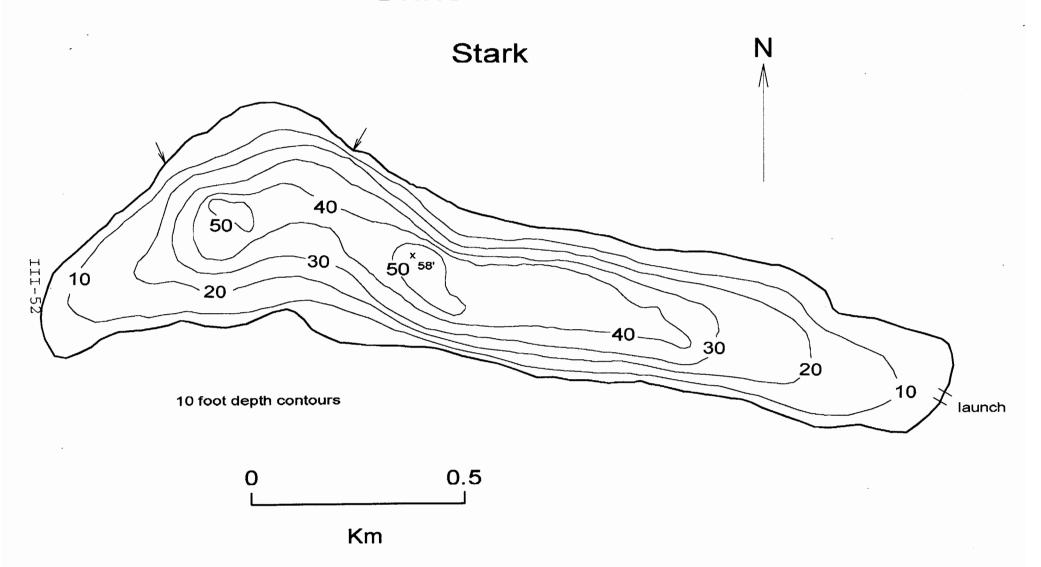
•	D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
	0	2	1	0	3	Oligo.

COMMENTS:

- 1. Also known as North Pond.
- 2. There is a 10 horsepower motor limit for all boats on this lake (RSA 270:117)
- 3. Christine Lake was previously surveyed and classified in 1981. There was no change in trophic classification and little change in water quality.
- 4. Nice launch site present next to town beach but needs a sanitary facility.
- 5. The land surrounding the lake is protected by a conservation easement owned primarily by the Percy Summer Club.

 The land adjoins the Nash Stream reserve, virtually protecting the entire watershed of the lake. The eight cottages are owned by the club.
- 6. Merismopedia (55%) was the dominant wholewater phytoplankton.

Christine Lake



FIELD DATA SHEET

LAKE: CHRISTINE LAKE DATE: 08/12/93 WEATHER: SUNNY & WARM(80); LIGHT BREEZE

TOWN: STARK

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DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	21.0	9.5	106 %
1.0	21.0	9.0	101 %
2.0	20.5	9.1	100 %
3.0	20.5	9.3	102 %
4.0	20.5	9.1	100 %
5.0	20.0	9.4	103 %
6.0	18.0	9.0	95 %
7.0	16.0	8.5	85 %
8.0	13.3	8.8	82 %
9.0	10.0	7.6	66 %
10.0	9.5	7.2	62 %
11.0	9.0	6.9	58 %
12.0	9.0	6.4	55 %
13.0	9.0	6.3	54 %
14.0	9.0	6.1	53 %
15.0	9.0	5.9	50 %
16.0	9.0	5.7	49 %
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SECCHI DISK (m): 4.9

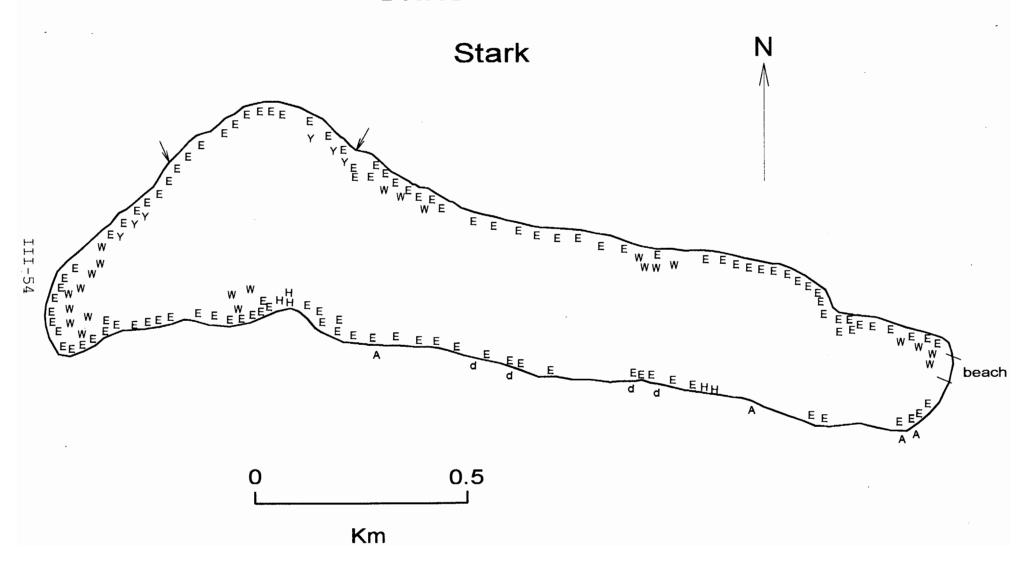
COMMENTS:

BOTTOM DEPTH (m): 17.5

TIME: 1030

^{*}Dissolved oxygen values are in mg/L

Christine Lake



AQUATIC PLANT SURVEY

LAKE: CHRISTINE LAKE TOWN: STARK DATE: 08/12/93

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Key	PLANT			
кеу	GENERIC	COMMON	ABUNDANCE	
E	Eriocaulon septangulare	Pipewort	Scattered	
A	Sagittaria	Arrowhead	Sparse	
Н	Equisetum	Horsetail	Sparse	
d	Dulichium arundinaceum	Three-way sedge	Sparse	
W	Potamogeton	Pondweed	Sparse	
Y	Nuphar	Yellow water lily	Sparse	
	2,044	<u> </u>		
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OVERALL ABUNDANCE: Scattered

GENERAL OBSERVATIONS:

- 1. Pipewort was present around most of the shoreline, but its sparse growth habit resulted in a "scattered" rating.
- 2. Irises were located on land around some of the shore.
- 3. A pair of loons was observed.